

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. **(Currently Amended)** A vertical cavity surface emitting laser module, the module comprising:

a vertical cavity surface emitting laser that has a predetermined operating temperature that corresponds with desired operational characteristics of the vertical cavity surface emitting laser, wherein the vertical cavity surface emitting laser is tuned such that the predetermined operating temperature is higher than a room temperature;

a temperature sensor; and

a heater configured to transfer heat to the vertical cavity surface emitting laser when the temperature sensor senses a temperature that is below an activation temperature, wherein the activation temperature is determined from at least in part in relation to a current curve of the vertical cavity surface emitting laser, such that the operating current of the vertical cavity surface emitting laser is maintained below an undesired excessive current.

2. **(Cancelled)**

3. **(Cancelled)**

4. **(Canceled)**

5. **(Previously Presented)** A module as defined in claim 1, wherein at the predetermined operating temperature, a cavity resonance point of the vertical cavity surface emitting laser is substantially aligned with a gain bandwidth peak of the vertical cavity surface emitting laser.

6. **(Previously Presented)** A module as defined in claim 1, wherein the temperature sensor comprises a thermistor.

7. **(Previously Presented)** A module as defined in claim 1, wherein the heater comprises a resistor.

8. **(Cancelled)**

9. **(Cancelled)**

10. **(Cancelled)**

11. **(Previously Presented)** A module as defined in claim 1, wherein the predetermined operating temperature is greater than 30 degrees Celsius.

12. **(Previously Presented)** A module as defined in claim 1, wherein the predetermined operating temperature is greater than about 50 degrees Celsius.

13. **(Previously Presented)** A module as defined in claim 1, wherein the predetermined operating temperature is about 70 degrees Celsius.

14. **(Cancelled)**

15. **(Cancelled)**

16. **(Previously Presented)** A module as defined in claim 1, wherein the control module turns the heater off when the operating temperature exceeds the predetermined operating temperature.

17. – 23. **(Cancelled)**

24. **(Previously Presented)** A vertical cavity surface emitting laser (VCSEL) module, comprising:

- a VCSEL;
- a temperature sensor configured to sense an operating temperature of the VCSEL;
- a heating element in thermal communication with the VCSEL; and
- a control module in communication with the temperature sensor and operably connected with the heating element and with the VCSEL, and the control module configured to operate in:

- a first operational mode where a change in operating temperature of the VCSEL is associated with a VCSEL operating current output of the control module; and

- a second operational mode where a change in operating temperature of the VCSEL is associated with a heating element control output of the control module, the heating element control output corresponding with a thermal output of the heating element;

- wherein a drop in VCSEL operating temperature below an activation temperature is associated with either:

- a corresponding relative increase in the VCSEL operating current output of the control module; or

- a corresponding change in a heating element control output of the control module; and

- wherein the control module is configured to operate in whichever operational mode requires the least amount of energy, relative to the other operational mode.

25. **(Cancelled)**

26. **(Cancelled)**

27. **(Previously Presented)** A module as defined in claim 24, wherein at the predetermined operating temperature, a cavity resonance point of the vertical cavity surface emitting laser is substantially aligned with a gain bandwidth peak of the vertical cavity surface emitting laser.

28. **(Previously Presented)** A module as defined in claim 24, wherein the temperature sensor comprises a thermistor.

29. **(Previously Presented)** A module as defined in claim 24, wherein the heating element comprises a resistor.

30. **(Previously Presented)** A module as defined in claim 24, wherein the predetermined operating temperature is greater than 30 degrees Celsius.

31. **(Previously Presented)** A module as defined in claim 24, wherein the predetermined operating temperature is greater than about 50 degrees Celsius.

32. **(Previously Presented)** A module as defined in claim 24, wherein the predetermined operating temperature is about 70 degrees Celsius.

33. **(Previously Presented)** A module as defined in claim 24, wherein the control module turns the heating element off when the operating temperature exceeds the predetermined operating temperature.